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UTILITY PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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INVENTION: GOLF CLUB AND PRACTICE ARRANGEMENT

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SPECIFICATION

To All Whom It May Concern:

Be it known that Benedict F. Marnocha, citizen of the United States, residing at 53315 Wallace Lane, South Bend, Indiana 46635, has invented certain new and useful improvements in a

GOLF CLUB AND PRACTICE ARRANGEMENT

of which the following is a specification.

GOLF CLUB AND PRACTICE ARRANGEMENT

RELATED APPLICATIONS

The present application is related to and claims priority to U.S. Provisional Patent Application, Serial No. 60/409,463, filed on September 10, 2002, entitled "Laser Putt II," and to U.S. Provisional Patent Application, Serial No. 60/447,593, filed on February 14, 2003, entitled "Laser Putt III," and to U.S. Provisional Patent Application, Serial No. 60/457,804, filed on March 26, 2003, entitled "Laser Putt IV," and to U.S. Provisional Patent Application, Serial No. 60/471,953, filed on May 20, 2003, entitled "Laser Putt V." The subject matter disclosed in those applications are hereby expressly incorporated into the present application.

FIELD OF THE INVENTION

The present invention relates generally to golf, and more particularly to a golf club and practice arrangement utilizing same. More specifically, the invention relates to a golf club, and practice arrangement utilizing same, that facilitates development of proper club head aiming technique. It will be apparent to those of skill in the relevant arts that variations in the specific designs disclosed may be made without departing from the spirit of the invention.

BACKGROUND AND SUMMARY OF THE INVENTION

One element of a proper golf shot is proper orientation or aim of the club head. It is important that the club head be properly oriented relative to the ball during set up. A proper golf swing or stroke will return the club head to the ball at substantially the same orientation adopted by the player during set up. Thus, it is important that the club head be properly oriented or aimed relative to a target along the desired line of ball flight or roll.

The most used club in golf is the putter. The most important and difficult task to accomplish with a putter is proper aim. In one embodiment, the present invention facilitates the development and practice of proper putter aim, one of the most important fundamentals in putting and one of the most difficult to master.

In certain embodiments, the present invention is intended primarily as a practice device which may be used both indoors and outdoors. However, the golf club of the present invention may be used in actual play on a course. This is desirable in that it eliminates the need to transfer learning from a practice device to an alternative club used in regulation play. In certain embodiments, the practice device/golf club of the present invention is well suited for both purposes, and may be used both to learn proper aim and alignment of the club, as well as in actual playing of the game of golf.

In one embodiment, the present invention includes a golf club comprising a shaft, a head attached to the shaft, a light-producing insert, and a nonlight-producing insert. The head has a ball-striking surface, an aperature formed in the ball-striking surface for

allowing light to pass therethrough and a cavity formed in the head adjacent the aperature. The light-producing insert is configured so as to be operably and removably received within the cavity. The nonlight-producing insert is configured so as to be selectively received within the cavity in place of the light-producing insert. In one embodiment, the nonlight-producing insert is substantially equal in weight to the light-producing insert and, in certain embodiments, may be substantially the same size and weight, and have substantially the same weight distribution, as the light-producing insert.

In certain embodiments, the ball-striking face of the head comprises a translucent material disposed over the aperature. A prism, or lens, may be disposed in the aperature for transmitting light produced by the light-producing insert. The prism columnates a light beam produced by the light-producing insert such that the light beam forms a line on a surface between the head and a target. In addition to forming a line on a surface, a portion of the light beam may be projected onto a surface of a target. In certain embodiments, the prism may be formed as part of the light-producing insert. In these or other embodiments, the aperature is located in an approximate midpoint of the ball-striking surface.

A switch may be provided to allow a user to selectively activate the light-producing insert.

The light-producing insert preferably comprises a battery-powered laser device. The nonlight-producing insert may be formed of any material having an appropriate size, weight and weight distribution.

In a practice arrangement particularly well-suited for putting, the invention comprises the combination of a golf club and a target. The subject golf club comprises a shaft, a putter head attached to the shaft, a light-producing insert, and a nonlight-producing insert. The putter head comprises a ball-striking surface, an aperature formed in the surface for allowing light to pass therethrough and a cavity formed in the putter head adjacent the aperature. The light-producing insert is configured so as to be operably and removably received within the cavity. The nonlight-producing insert is configured so as to be selectively received within the cavity in place of the light-producing insert.

The target comprises a surface for reflecting at least a portion of a light beam produced by the light-producing insert to provide a visual indication of orientation of the putter head relative to the target. The target may comprise a surface which extends transversely to a target line defined by the light-producing insert. The surface may have a plurality of regularly-spaced marks thereon. A portion of the target may be configured so as to extend into a golf hole to secure the target in position relative to the hole. In one embodiment, a prism is provided to columnate a light beam produced by the light-producing insert such that the light beam forms a line on a putting surface between the putting head and the putting target. A portion of the light beam may also be projected directly to, and reflected by, a surface of the target.

The concepts disclosed are not limited to use with a golf club of the exact type illustrated in the drawings, but may be used with clubs of many shapes, sizes, or dimensions.

Additional embodiments, features and advantages will become apparent to those skilled in the art upon consideration of the following description of the illustrated embodiments exemplifying the best mode of carrying out the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows a perspective view of one embodiment of a golf club constructed in accordance with the present invention.

Figure 2 shows a perspective view of one embodiment of a golf club and practice arrangement constructed in accordance with the present invention.

Figure 3 shows a front view of a portion of one embodiment of a golf club constructed in accordance with the present invention.

Figure 4 shows a side view of a portion of one embodiment of a golf club constructed in accordance with the present invention.

Figure 5 shows a top, cross-sectional view of a portion of one embodiment of a golf club constructed in accordance with the present invention.

Figure 6 shows an illustrative example of a nonlight-producing insert used with the embodiment of Figure 5.

DETAILED DESCRIPTION OF THE FIGURES

Figure 1 shows a perspective view of one embodiment of a golf club constructed in accordance with the present invention. Golf club 10 includes a shaft 12 and a head 14 which is attached to shaft 12. In the embodiment shown in Figure 1, the golf club head is

specifically designed for use in putting. Head 14 includes a ball striking surface or "face" 16. An aperature 18 is formed in surface 16 for allowing light to pass from the inside of head 14 through surface 16, as will be explained in more detail below.

A prism, or lens, 19 is disposed within aperature 18. Prism 19 columnates a light beam produced by the light-producing insert so as to cause a portion of the beam to define a line along a surface in front of head 14. A cavity (see, for example, Figure 4) is formed within head 14 for receiving a light-producing insert which is discussed and illustrated in additional detail in connection with Figures 3-5. Covering aperature 18 is translucent element 20 which may be formed, for example, of clear plastic. The purpose of element 20 is to provide a smooth surface along that portion of surface 16 which contacts a golf ball. Element 20 further serves to protect the light-producing insert discussed in more detail below.

Figure 2 illustrates a golf club 10, as used to practice alignment for a putting stroke. The arrangement of Figure 2 includes, in addition to golf club 10, a target 22 which comprises a surface 24 having a plurality of regularly-spaced marks illustrated, for example, by marks 26 and 28 spaced thereon. A beam of light, illustrated by line 30 is produced by the light-producing insert of club 10 and projected along line 30 to target 22. At least a portion of the light beam is reflected off surface 24 of target 22 so as to be visible to the user of club 10. As noted above and discussed in greater detail below, a prism or lens is provided in the path of the light beam to "columnate" the beam so as to cause a portion of the beam to define a line along path 30. In addition to the line, a

portion of the light beam is projected as a "dot" or short vertical line on surface 24, as is illustrated by reference numeral 32.

Target 22 is shown inserted into a hole 34 which may be a hole on a practice green or a regulation green, or another object in an indoor or outdoor setting. This invention allows the user to become accustomed to and practiced at aiming the ball striking surface 16 of club 10 directly at target 22. The regularly-spaced markings on surface 24 of target 22, which in some embodiments may extend laterally from hole 34 to a greater extent than shown in Figure 2, allow a user to aim at a target other than the center of the hole, if desired. This is often necessary to accommodate for irregular or uneven putting surfaces.

It should be noted that bright sunlight may cause the path of the light beam along line 30 to be obscured, or to become very dim. In that event, the dot or short line 32 projected onto surface 24 will still be visible to the user.

Figure 3 shows a front view of a portion of one embodiment of a golf club constructed in accordance with the present invention. Shown in dashed lines behind translucent material 20 is light-producing insert 36 which is disposed within a cavity formed in head 14. Insert 36 includes one or more batteries 38 which power a light-producing source, such as a laser. The light-producing source produces a light beam which, in the embodiment illustrated, is projected from a central portion 40 of insert 36 through aperature 18 and prism 19, as is illustrated in Figure 2. The beam is columnated or split so as to define a line on the generally-horizontal surface between club head 14

and a target, and so as also to project at least a portion of the beam onto a generally-vertical transverse element associated with the target.

Figure 4 shows a side view of a portion of one embodiment of a golf club constructed in accordance with the present invention. Double-dashed line 42 represents a light beam produced by light-producing insert 36, as projected through aperature 18 and prism 19, and projected along a surface between club 10 and the target. A portion of the light beam, illustrated by double lines 44 is projected directly toward the target.

Figure 5 shows a top, cross-sectional view of a portion of one embodiment of a golf club constructed in accordance with the present invention. Light-producing insert 36 is shown disposed within a cavity formed in head 14. In this embodiment, light-producing insert 36 includes a laser, illustrated generally by element 46, powered by batteries 38. Relatively small lasers of the type which may be used in this invention are generally available, and are used in hand-held pointing devices, firearm aiming devices, and other applications. In the embodiment illustrated, prism 19 is shown as an integral portion of insert 36. In other embodiments, prism 19 may be separately mounted in aperature 18.

Figure 6 shows an illustrative example of a nonlight-producing insert 50 used with the embodiment of Figure 5. In the illustrated embodiment, insert 50 is substantially the same size and weight, and has substantially the same weight distribution, as light-producing insert 36. Insert 50 is designed to replace insert 36. This may be desirable in

instances where club 10 is used in regulation golf play, or other instances in which the user does not wish to have light-producing insert 36 installed.

An access cover may be provided in the bottom, rear, or top of club head 14 to provide ready access to the internal cavity and to allow for easy interchange of inserts 36 and 50. The access cover may be secured by screws, or equivalent fasteners. In certain embodiments, either one or another of the access cover, the light-producing insert, and the nonlight-producing insert (or any combination thereof) may be provided with a "snap fit" to facilitate access to, removal of, and interchangeability of the inserts.

With further reference to Figure 5, wires 52 are shown extending from insert 36 to an opening in head 16 which receives shaft 12. Wires 52 are also illustrated in Figure 3. These wires extend up through shaft 12 to a switch which may be positioned, for example, immediately below a grip of club 10. The switch allows a user to selectively activate light-producing insert 36 to selectively project light beam 42/44, when desired. In an alternative embodiment, a switch may be provided, for example, on the sole or bottom of head 14 and operated by downward pressure on club 10. Other alternative positions and arrangements of a switch to activate light-producing insert 36 will be apparent to those of skill in the art.

Although the above description refers to particular means, materials and embodiments, one skilled in the art can easily ascertain the essential characteristics of the present invention. Various changes and modifications may be made to adapt to various

uses and characteristics without departing from the spirit and scope of the present invention.